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GERMANY'S ECONOMIC UNIFICATION AN ASSESSMENT AFTER TEN YEARS

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GERMANY'S ECONOMIC UNIFICATION AN ASSESSMENT AFTER TEN YEARS

Abstract

A political miracle occurred when Germany was reunited, and at first glance an economic miracle has followed. Real incomes in the east have now reached the western level, and investment per capita has been much higher than in the west. However, every third deutschmark spent in the east has been coming from the west, investment in equipment has fallen below the west German per capita level, and convergence seems to have come to a halt at an overall labor productivity of only 55% of west Germany. Excessively high wages coupled with investment incentives that made the cost of capital negative rank high among the possible explanations. This paper describes reforms of the labor market that could help to make convergence continue.

JEL Classification: H0, O52

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1. A political miracle occurred ...

Even the day the wall came down, there were very few people in Germany who believed in rapid unification. Today, ten years after that event, the political unification of Germany is history. It went surprisingly smoothly, without riots and bloodshed. Only a handful of neo-Nazis have disturbed the picture, but even they have become less vocal.

German unification was a political miracle since it was hard to imagine that the military forces of the Soviet Union would ever retreat peacefully from their occupied territories. However, the courage of Michael Gorbachev, the loyalty of George Bush and the cleverness of Helmut Kohl made the unthinkable true. With incredible speed, the two parts of Germany were again unified after 45 years of separation. Given the political instability of the Soviet Union at that time, it is hard to imagine better policy decisions by the Western leaders than those which had actually been taken.

In relation to the political achievements, the economic aspects of unification seemed of secondary importance to many. Helmut Kohl, a historian by education, predicted “flourishing landscapes in three, four, five years,” and he thought that the budgetary costs of unification would be small enough to be financed from the “petty cash”. Today we know that things were not that easy and that the economic unification turned out to be much more difficult than political unification. This paper reports on the state of economic integration in Germany and tries to draw some conclusions for the future course of unification policy.

2. ... and at first glance an economic miracle has followed

In an important sense Helmut Kohl was right. Today there are flourishing landscapes in east Germany. A gigantic building boom has led to a marvelous renovation of east German cities. Less destroyed by British bombers than the western cities, many east German cities have been

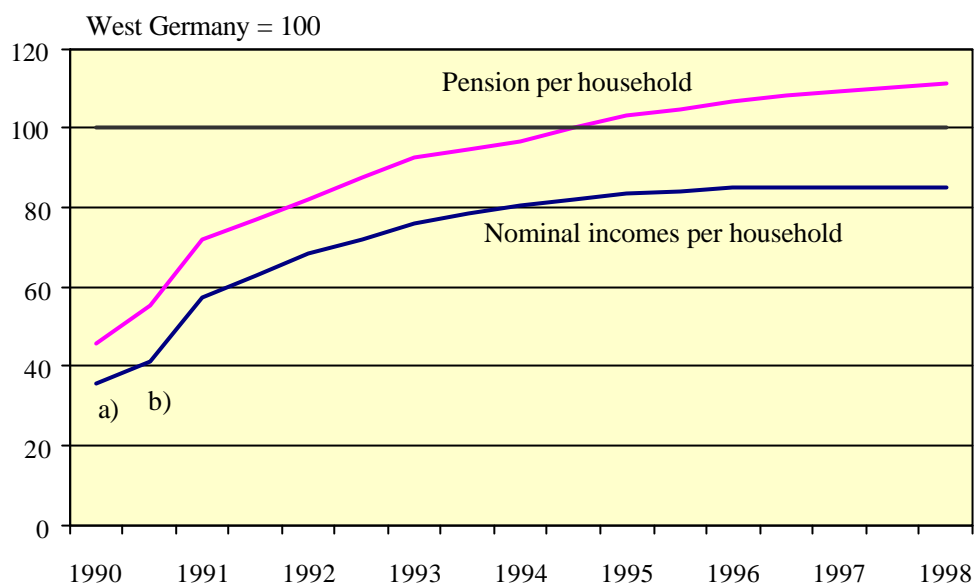
restored to their pre-war glamour. Spectacular facades, golden ledges, expensive shops and luxurious pedestrian areas define the urban life in the post-communist era. Many of the eastern city centers now outshine the cheap charm of the sixties that characterizes the cities of west Germany.

The infrastructure, too, has been quickly renovated. Nearly all streets have been newly paved, the electricity, fresh water and sewage systems have been overhauled, many new autobahns have been built, and the airports and railway stations have been renovated and converted into lively shopping centers. Fast ICE trains now connect the cities, and the fiber optic telecommunications network is one of the best in the world. Most importantly, the well-functioning legal system of west Germany was implemented in east Germany right from the beginning. This has been a major advantage over the other eastern countries, which are still undergoing a cumbersome process of gradually adjusting their legal systems to the requirements of a market economy.

Living standards, which had been extremely poor in communist times, have nearly reached those in the west. The micro data analyzed by the Ifo Institute show that east German households' average net-of-tax incomes have surpassed 80% of the western level. Given the somewhat lower price level in the east, which primarily results from the low housing costs, this implies an average real household income of at least 90% of the west.¹ Figure 1 depicts the time path of nominal household incomes relative to the west German level since the year 1990.

¹ The data refer to typical households and may suffer from a selection bias insofar as richer households which tend to concentrate in the west are not included in the sample. They also neglect wealth income which is indeed negligible with the typical west and east German household, but, once again, not with richer households not included in the sample. See Paqué (1999).

Figure 1: *Average nominal and real net-of-tax household incomes in east Germany
relative to west Germany*



Source: *Ifo Wirtschaftskonjunktur* No. 7, 1999, p. A18.

Note: a) Spring 1990, before currency union, evaluated at an exchange rate of 1:1. b) July 1990, shortly after currency union.

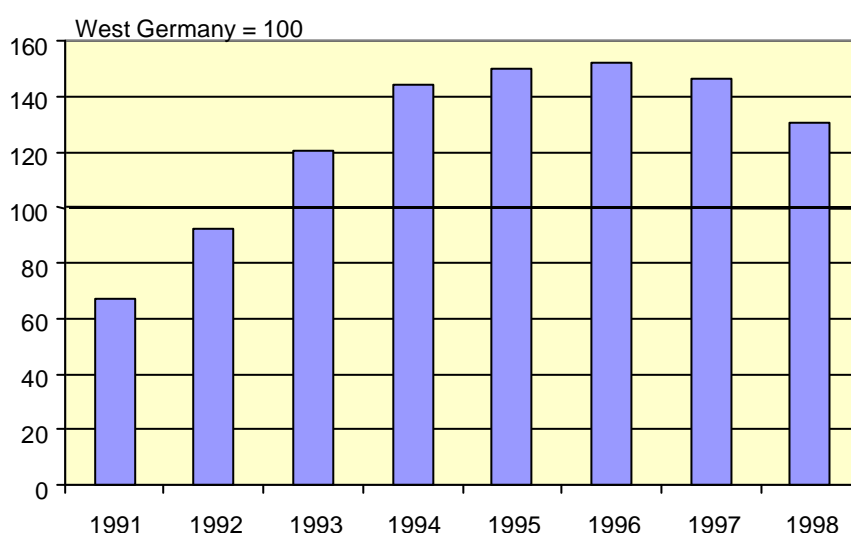
Not all of these incomes are active ones. They include pensions, social aid and unemployment insurance benefits. The separate level of relative pensions is also shown in the figure. Remarkably, in east Germany household pension income is higher than in west Germany, since the labor force participation of women is higher and since an overly favorable formula for the translation of GDR claims into the western pension system was chosen. In 1998, on average, household pensions in the east are 111% of those in the west in nominal terms and about 120% in real terms.²

The high living standard in the east does have a correspondence in the real economy which has been modernized very rapidly. The general approach has been to close down the existing manufacturing firms and to open new ones next door, the General Motors plant in Eisenach being the most prominent example. The result was a decline in employment in the

manufacturing sector by 80% and a dramatic productivity boost. According to Barrell and te Velde (1999), in the period from 1990 through 1997 real labor productivity in east Germany increased by nearly 80%, while real labor productivity in Poland, Ireland and Hungary increased only by about 30%.

The development was paralleled, if not induced, by a remarkable investment boom that exceeded all expectations. While the share of investment in GDP in west Germany was about 20% in the last decade, it was way above 40% in east Germany, with peak levels close to 50% in the years 1992 through 1995. It may be argued that these figures are so high because east German GDP has been so low. However, even in per capita terms it exceeded the west German level by up to 52%. Figure 2 demonstrates the time path of east German per capita investment relative to the respective west German level. The figure shows that the relative investment volume in east Germany has declined recently, but it still is at a level of more than 130%.

Figure 2: *Aggregate investment per capita in east Germany relative to west Germany*



Source: Ifo investment database; see Müller (2000).

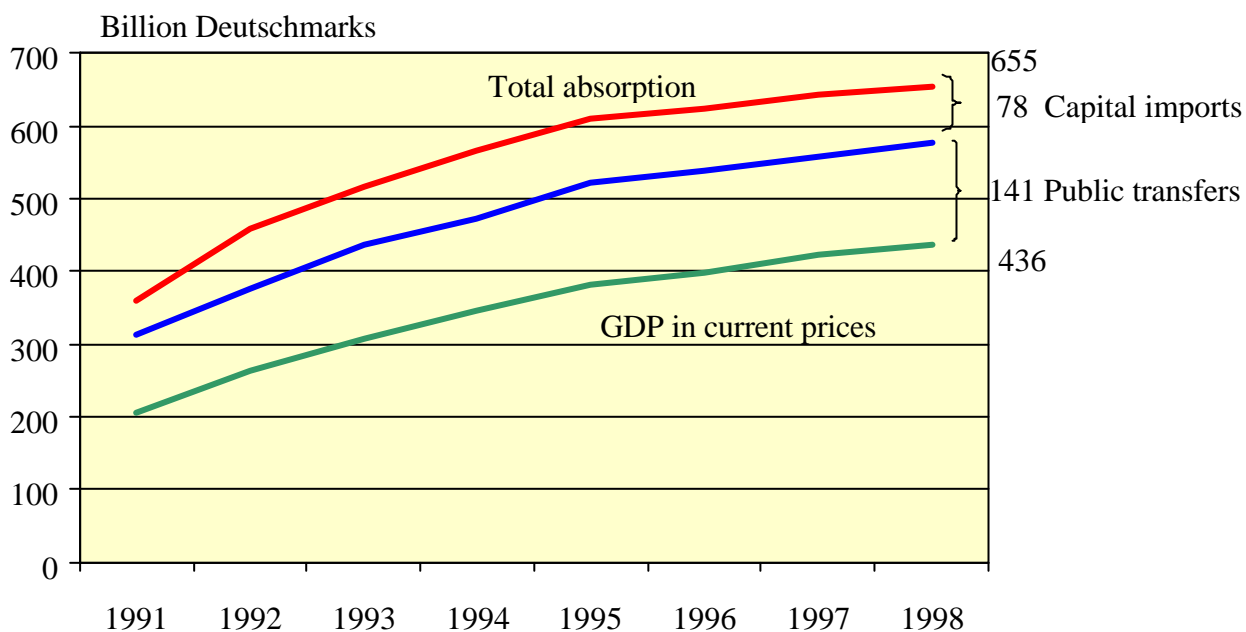
Note: Aggregate investment per head of working population (15–65 years of age).

² See Nierhaus (1999).

3. ... however, vast resources have been coming from the west Germany.....

The development of the east German living conditions is remarkable. The problem is, however, that the abundance of resources available to the east Germans does not fully result from east German production. As figure 3 shows, aggregate absorption -- the resource use by private households, investors and the government -- has been much larger than east German GDP since the time of unification, indicating a large current account deficit. In 1998, east German GDP was 436 billion deutschmarks, but absorption was 655 billion deutschmarks, which is 220 billion deutschmarks or 50% more. In other words, every third deutschmark spent in east Germany came from the west.

Figure 3: *Excess absorption in east Germany*



Sources: German Statistical Office, Ministry of Economics, German Institute of Economic Research, German National Bank.

Note: The official absorption statistics are available only until 1994. In the subsequent years, absorption has been calculated from the official GDP and transfer figures by adding an estimate of the private capital import based on Ifo's investment database.

As the figure shows, nearly two thirds of the current account deficit of east Germany is financed by public transfers, and one third by private capital flows. More than 50% of the transfers, in turn, are for social security and only 12% are infrastructure expenses. The remainder includes intergovernmental grants of various kinds, in particular the payments of the fiscal equalization fund (Länderfinanzausgleich) and the federal supplemental grant (Bundesergänzungsabgabe). The private capital flows include direct investment in plant and equipment, business loans and public loans. The latter is noteworthy insofar as it shows that it would be wrong to interpret the private capital flows as resulting exclusively from the superb investment opportunities in the east. Public borrowing is part of the explanation of these flows.

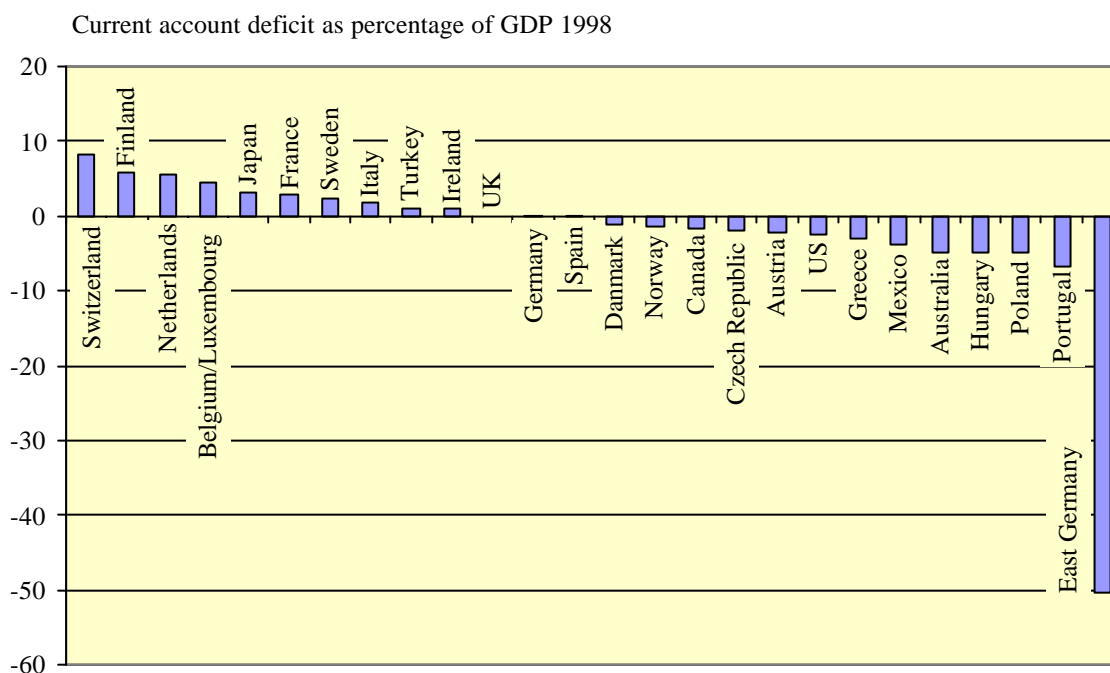
This points to another problem of the new Länder: the enormous increase in public debt. In 1998, public per capita expenditure in the new Länder was 19% more than in the old ones, but per capita tax revenue was 26% less. The difference was partly financed by the public transfers reported in figure 3 and partly by funds the new Länder borrowed in the capital market. In 1998, up to 33 billion deutschmarks of the estimated 78 billion deutschmarks capital inflow may simply have resulted from an increase in east German public debt.³ As was recently shown by Seitz (1999), by 1998 per capita debt of the east German communities and Länder had surpassed the respective figure for the west German Länder, although they had started with practically no public debt in 1990.⁴

The size of the current account deficit is an unresolved problem for German unification since it indicates that the east German economy is far from being self-sustaining. To get a feeling for the size of the problem figure 4 compares the current account deficit shares in GDP of various other countries, including those which rank highest in a worldwide

³ The figure measures the net increase in east German public debt; see Seitz (1999, p. 33), who found for 1998 an external financing ratio of 42 % concerning total investment in east Germany.

comparison. It is alarming to see that even fragile economies like Mexico, Poland, Portugal or Hungary have deficit shares that are only one tenth of the east German figure.

Figure 4: *Current account deficit as a percentage of GDP. A comparison of different countries and regions*



Source: OECD, Economic Outlook, November 1999, p. 70 (preliminary edition), and CES.

Note: For the east German current account deficit see figure 3.

The east German deficit figure reminds us more of other countries' import shares in GDP than their deficit shares. For a country the size of east Germany an import share of 50% would not be implausible. Countries like Belgium, Austria or the Netherlands have import shares of between 45% and 70%. However, unlike east Germany, there the import shares are backed by equivalent export shares. This, indeed, is the east German problem. The sector of non-traded goods operates as well as in other countries, and there is no shortage of imported

⁴ The figures refer to the territorial states; the three city states Bremen, Hamburg and Berlin are excluded. The public debt does not include the debt of the communal building societies which was inherited from the GDR.

goods and services. To the visitor the visible way of life does not differ much from the west. Given that there is enough money around, construction, retailing, restaurants, cultural activities, banking and outward tourism all work very well. The only problem is that a basis in terms of goods and services sold to the rest of the world is missing. In east Germany, the money that other countries earn abroad comes as gifts and loans from the west. Except for this peculiarity, everything else is more or less equal.

The manufacturing sector of the GDR had been reasonably successful before unification. At an exchange rate that drove the wage cost to only 7% of the west German one, the GDR had been able to maintain an export share of roughly 40% of its GDP, and about half of the exports went to the west. In the first two years after unification output in the manufacturing sector fell by more than 60% and since then it has only gradually recovered. As of today (1999), employment in the manufacturing sector has remained at a level of only one fourth of what it used to be in the GDR. It is true that output in that sector steadily rose between 1991 and 1998 at an impressive annual rate of 4.7%, however that growth rate relates to the very low level to which output had fallen after the breakdown of communism. It is unclear whether, as of 1999, the deutschmark value of east German exports to the western regions and countries had already surpassed the GDR level, but no statistics are known to the author that could be used to clarify this issue.

It is debatable how dangerous the situation depicted in figure 4 really is. A five percent current account deficit in Poland may be more problematic than a 50% current account deficit in east Germany. After all, the west German economy is strong enough to cover the necessary expenses for the east, and Germany as a whole has a balanced current account with the rest of the world despite the internal excess absorption.⁵ As long as the west Germans tolerate the resource transfer, there is no real danger involved. Nevertheless, the public transfer is 4.5% of

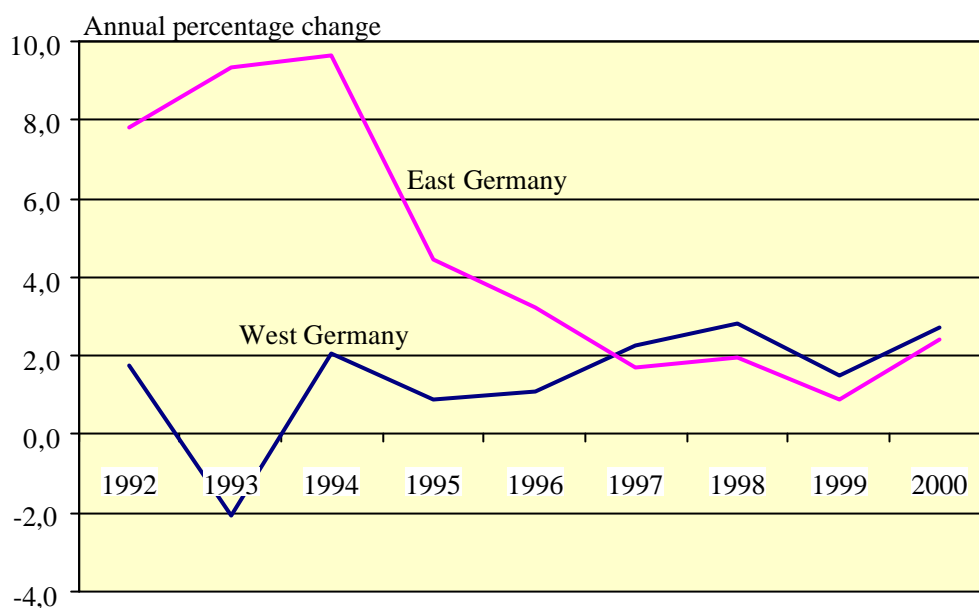
⁵ In 1989, the year before unification, Germany had a current account surplus of 107.1 bn deutschmarks, which was the second largest in the world.

west German GDP, and if east German public borrowing is added, the total public resource transfer to east Germany is 5.6% of the west German GDP. This may seem a small number if it manages to disappear in the foreseeable future, but less so should it continue forever.

4. ... and some economic indicators are more than alarming.

Unfortunately, at present there is not much reason for optimism, since the convergence process seems to have come to a halt since 1996. There are various pieces of information demonstrating this.

One is the fact that east German GDP is currently growing at a smaller rate than west German GDP. Initially, from 1989 through 1991, east German GDP had shrunk by more than 40%, which was more than the collapse of the US economy in the great depression (about one third). Thereafter, and from a new statistical base, the economy grew first at a rate of about 8% -- 9%. From 1997, however, growth staggered, with annual growth rates of only 1% through 2%. It is true that both the east and the west German economies were in recession in recent years. But the east German economy suffered much more and according to the most recent Ifo business polls it will not participate equally in the strong boom foreseen for the year 2000. The joint forecast of Germany's six economic research institutes published in autumn 1999 foresees for the year 2000 a growth rate of 2.7% in west Germany, but only one of 2.4% in east Germany. Figure 5 illustrates the development of the growth rates of the two parts of Germany since 1992.

Figure 5: *Real growth in east and west Germany*

Sources: Association of statistical offices of German Länder, working group on regional accounts 1999, Ifo Institute.

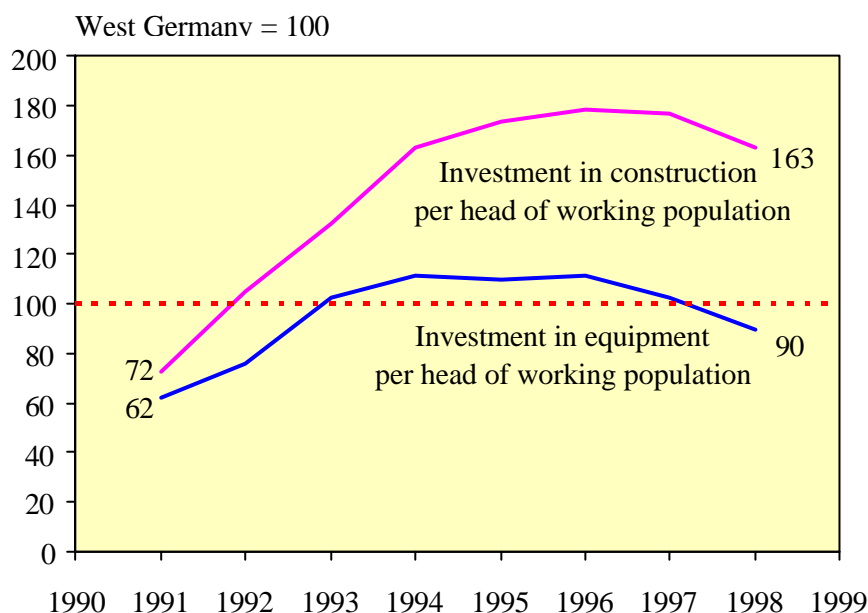
Note: GDP growth in 1991 prices, figures from data base of the statistical offices of the German Länder; 1999 and 2000 estimation and projection by Ifo.

Another piece of information is the level of equipment investment. Normally, economic growth stems from the accumulation of capital. Capital is productive in itself and it also carries technological knowledge. Thus, catching up with west Germany is not conceivable without a long period during which the per capita investment in east Germany is higher than in west Germany. As figure 2 showed, this condition indeed seems to have been satisfied since unification despite the recent slowdown of the investment rate. However, the impression may be deceptive.

Figure 6, which was calculated from the Ifo investment database,⁶ breaks the investment figure down to its components showing that the extra investment in the east has concentrated on building investment rather than equipment. It is indeed the renovation of the city centers where most of the invested money has gone, and here per capita investment has

been up to 80% more than in the west. Investment in equipment, by contrast, performed poorly. It was significantly above the west only in the three years 1994 through 1996, and since 1998 it has dropped to only 90% with even lower values to be feared for 1999 and 2000. This is truly alarming for the further convergence process, because it is equipment rather than buildings which carries the technological progress and has a direct effect on labor productivity and competitiveness. If per capita investment in equipment does not exceed that in the west, a continued conversion process is hard to imagine.

Figure 6: *East German per capita investment in building and equipment relative to the west*



Source: German statistical office (1999), Fachserie 18 (investment in construction), Ifo's database for investments in Germany (investment in equipment); German statistical office (1999) Fachserie 1, Reihe 4.1.1 (working population); cf. Müller (2000).

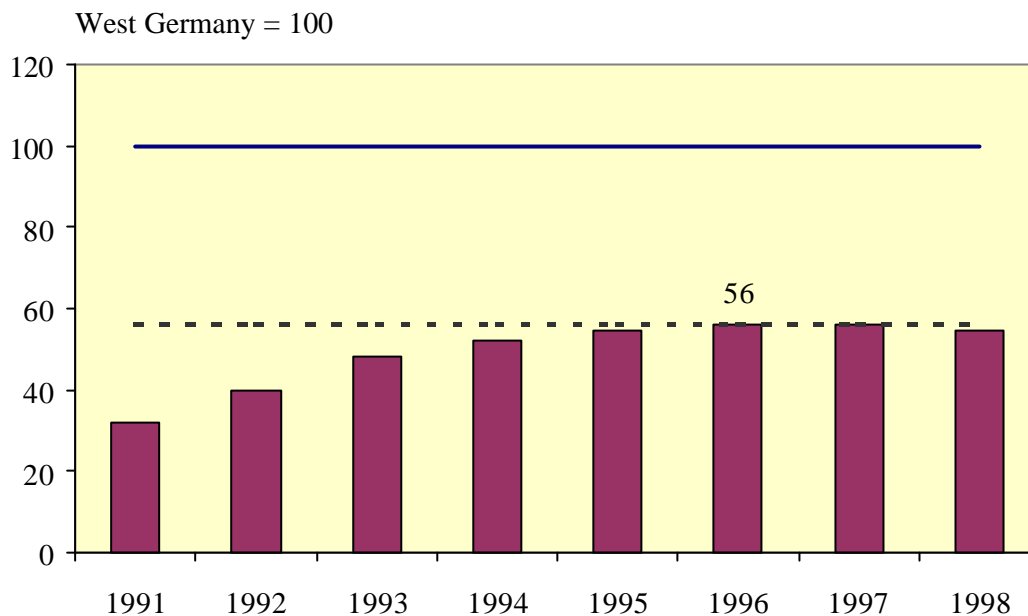
Note: Investment per head of working population (15-65 years of age).

Indeed figure 7 demonstrates that the convergence of per capita output seems to have come to a halt. Dividing GDP by the number of people of working age and relating this to the

⁶ The Ifo investment database is the only source providing data for west and east Germany separately; its data are used by the Federal Statistical Office for its east German investment statistics.

respective western figure produces a value of only 56%, and this value has persisted since about 1995. No upward trend is in sight.

Figure 7: *Convergence of per capita output?*



Sources: German Statistical Office (1999), Fachserie 18, Mikrozensus 1999

Note: GDP per head of working population (15–65 years of age).

5. There are alternative explanations for the halt to convergence ...

If seen against the usual convergence models, the halt to convergence is more than surprising because, normally, an asymptotic adjustment towards the same structural variables is predicted when there is free migration of the relevant factors of production and a free exchange of technological knowledge. There are at least four complementary explanations for why the normal model predictions do not apply to east Germany, and they may all be true.

Figure 7 demonstrates the halt to convergence in terms of per capita output. Per capita output is the product of the participation rate and the output per employee. The explanations for a halt to convergence that are given below may apply to one or both of these factors.

i) *Termination of the investment subsidy law*

The first explanation for a halt to convergence is the termination of the investment subsidy law (Fördergebietsgesetz) at the end of 1996. That law offered very generous investment grants and depreciation allowances that came close to an immediate write off. From 1997 it was replaced with a much less generous law which no longer foresaw special depreciation allowances and offered smaller investment grants. The termination of the investment subsidy law clearly explains why equipment investment fell after 1996, but it does not explain why it fell below the western level and why the growth of per capita output had slowed down long before the end of 1996. Thus other explanations have to be sought.

ii) *Negative cost of capital*

Paradoxically, one alternative explanation may be the investment subsidy law itself. The investment incentives imbedded in that law were so large that they actually made the cost of capital negative for most types of investment. As reported in Sinn (1995), for a typical investment in industrial equipment, the cost of capital was -5.1%. Thus, a project whose pre-tax losses would have consumed 5.1 % of the invested capital per annum enjoyed sufficiently large subsidies to compete with a normal investment in the international capital market. The economic implication of the negative cost of capital was dramatic because capital changed from being a factor of production to being an economic good. Hosting capital became a service which firms offered to a well-paying government.

Firms reacted to this fundamental change of regime by operating at a point of their production possibility frontier where they sacrificed labor productivity with regard to their traditional output in order to make an abnormal increase in the capital intensity possible. In the normal textbook world of economics, with positive factor prices and a free transfer of technological knowledge, such a result would not have been possible, since firms would

always have operated at a point of their possibility frontier where the rate of substitution of capital for labor is negative. However, the negative price of capital drove them to a point at the production possibility frontier where the rate of substitution was positive and where a higher capital intensity went along with a lower level of output per employee.

Figure 8: *The implications of a negative cost of capital*

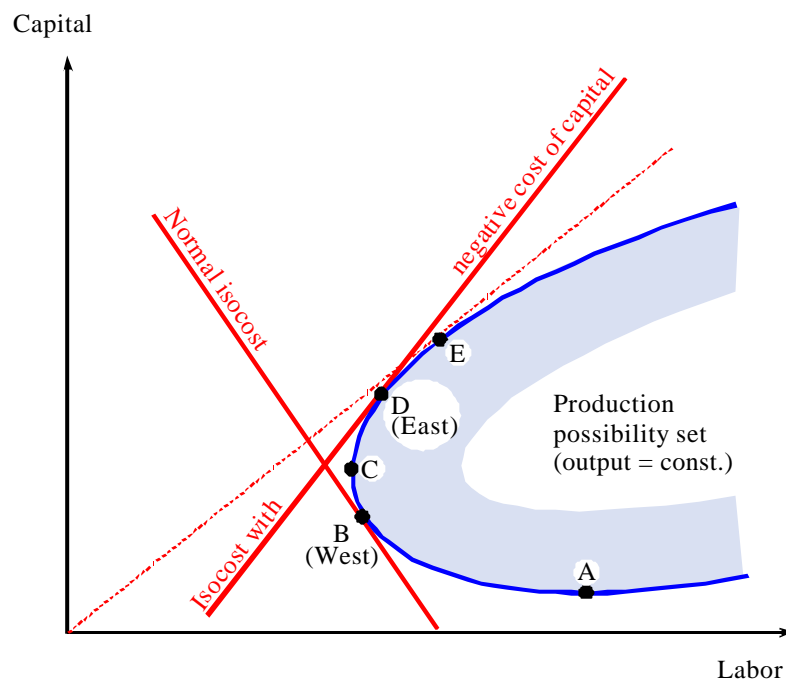


Figure 8 illustrates this result. With a normally sloped isocost line firms would choose a point like B between A and C on the efficiency frontier. When the cost of capital is negative, the “isocost” is positively sloped, and a solution such as D may emerge.⁷ As long as D is between C and E, where E is the point where a ray from the origin is tangent, a higher capital intensity will be accompanied by a lower labor productivity. Thus overcapitalization

⁷ A range where the isoquant is positively sloped is normally not considered because the fact that the firm has to pay for the factors of production excludes a solution in this range. Nevertheless it must exist if a solution to the firm’s decision problem exists. In fact, the positively sloped range is the graph of a production function where capital is an output good and labor an input good.

can, in principle, explain why east German labor productivity remains lower than in west Germany even when the economy is in a long-term equilibrium.

There is empirical evidence for this prediction insofar as rapid modernization has established new structures that have reacted to the fiscal incentives. Many east German sectors now have a higher capital intensity than their west German counterparts but suffer nevertheless from a lower labor productivity. Table 1 reports the relevant figures for all sectors whose capital intensity is higher than in the west. It is striking to see that the three sectors with the highest relative capital intensity have a labor productivity of just one half or less than that of the west.

Table 1: *Relative labor productivity and capital intensity
in the capital intensive east German sectors
(as compared to the west German counterparts)*

| Sector | Capital Intensity (%) | Labor Productivity (%) |
|------------------------------|-----------------------|------------------------|
| Transport equipment | 108 | 49 |
| Paper and paper products | 110 | 74 |
| Chemicals | 110 | 59 |
| Stone, clay and glass | 111 | 67 |
| Leather and leather products | 117 | 75 |
| Wood and wood products | 119 | 89 |
| Basic metals | 127 | 51 |
| Motor cars | 155 | 52 |
| Oil refineries | 189 | 25 |

Source: Gesamtwirtschaftliche und unternehmerische Anpassungsfortschritte in Ostdeutschland. Neunzehnter Bericht, DIW, IWH and IfW, *IfW discussion papers* 346 and 347, Kiel 1999.

Note: The figure refers to all sectors whose capital intensities are above that of the respective west German ones.

Klodt (1999) has recently argued that the low labor productivity results from an under-utilization of capacity of east German firms. In his view, some of the excessively capital intensive structures are “nowadays suffering from idle capacities.” This may also be an explanation, but it has the disadvantage that it cannot easily be reconciled with the fact that the relevant sectors all produce internationally traded commodities. Profit maximizing firms

will fully utilize their capacities when they can sell their products to the world market. However, when they design their plants they may divert labor away from producing ordinary output in order to be able to “host” more capital and collect the money which the government pays for this “service.”

iii) *Dutch disease*

A third explanation could be a Dutch disease type of problem. When a country has an abundance of natural resources to sell to the rest of the world, it tends to suffer from a revaluation of its currency and a resulting reduction in the international competitiveness of its manufacturing sector. Resource exports crowd out commodity exports. Although east Germany has no abundance of natural resources, it receives external funds as if it sold a natural resource (see figure 3), and this could then, too, imply a crowding out of the manufacturing sector. Of course, a nominal revaluation is impossible when there is one currency, but a real revaluation could occur via an increase in the commodity prices and wages.

Unfortunately, this argument cannot easily be reconciled with the fact that commodity prices in east Germany have remained 10% lower than those in west Germany and that the resource transfer seemed to follow rather than anticipate the wage increase. Nevertheless the Dutch disease hypothesis may be useful insofar as it helps explain why the high wages are apparently consistent with an equilibrium of the east German economy where the output per capita remains below the western level.

iv) *Mezzogiorno*

When a cause for east Germany’s problem is sought, the Mezzogiorno effect ranks highest among the explanations. Italy’s Mezzogiorno problem arguably results from collective wage bargaining. Due to their economic dominance it used to be the unions and employers’

organizations of the north which fixed the wages for the whole of Italy, but wages that fitted the north were too high for the south.⁸ Unemployment and economic stagnation in southern Italy -- the Mezzogiorno -- resulted. This phenomenon is sufficiently important to devote another section to its analysis.⁹

6. ... but wages seem to have been the dominant problem.

East Germany's problem was very similar to that of southern Italy, since there, too, wages were dictated from elsewhere.¹⁰ The crucial wage negotiations took place in 1991. They fixed the whole time path of the eastern wages relative to those in the west. At that time, however, privatization had just started, and there were no private entrepreneurs who could have participated in the negotiations. What happened instead was that the west German employers' associations negotiated about the east German wages. Their negotiation partners were the newly founded east German trade unions which were advised by the western unions. To a large extent the negotiations were proxy negotiations, where the parties involved settled labor conditions for others. The dominant motive in these negotiations was to avoid any risk of endangering west German jobs, and hence the negotiating parties agreed to fully adjust the wages in as little as five years to those in the west. Including the revaluation effect that resulted from the 1:1 currency conversion and taking account of a 15% wage drift in west Germany this would have meant a twelve-fold increase in the wage rate, from 7% to 85% of the west German level.

Figure 9 shows what has happened in reality; it refers to the average hourly wage cost in the manufacturing industry.¹¹ Obviously, relative wages in the east jumped from about 7%

⁸ As of 1999 this bargaining system has been changed so as to give the south more autonomy over the southern wages.

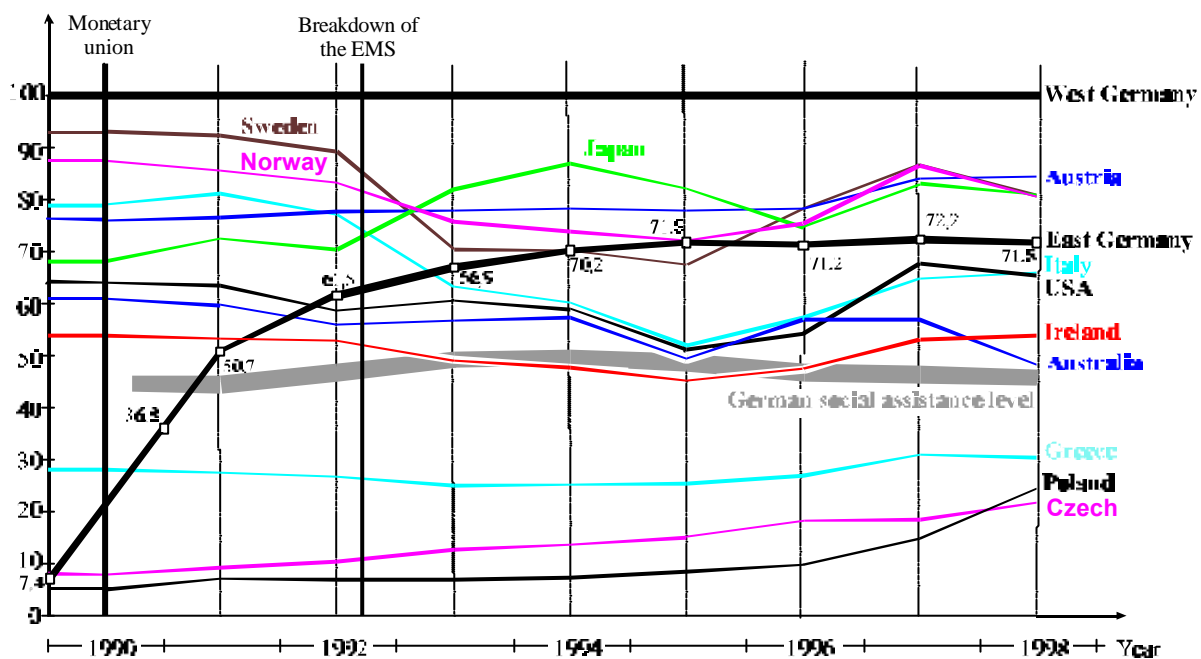
⁹ Cf. also Boltho, Carlin, and Scaramozzino (1996) and Keller (1997).

¹⁰ See Sinn and Sinn (1991, pp. 165 -168).

¹¹ The figure refers to average wages only. See Franz and Steiner (1999) for an extensive report on the wage distribution.

to 37% within the unification year. This was the revaluation effect of the currency union plus the result of some early negotiations. Thereafter the wage rate quickly increased to 72%, a level which it had reached as early as 1995 and has maintained thereafter. This has been primarily the result of the negotiations.

Figure 9: *East Germany's wage development since unification*



Sources: OECD, *Main Economic Indicators* (several issues, hourly earnings in manufacturing); Federal Statistical Office Germany, *Fachserie 16, Reihe 5*, (several issues, Tabelle 1.1: Index der durchschnittlichen Bruttostundenverdienste der Arbeiter im Verarbeitenden Gewerbe); *Economics of Transition* Vol.4 (2), 1996, table 6, p. 543 (Wages and salaries for Poland 1990-95); Deutsche Bundesbank, *Monthly Report*, (several issues, external values of the Deutsche Mark); W. Breuer and D. Engels, *Grundinformationen und Daten zur Sozialhilfe*, IGS Sozialforschung und Gesellschaftspolitik, Köln, 1999, p. 24 (German social assistance); Federal Statistical Office Germany, *Statistisches Jahrbuch* (1999 and 1994, table 21.2, net income of 4-person households with average income).

The wage increase did not, however, continue to 85% as predicted: wages increased ten-fold but not twelve-fold. The reason was that more and more firms left the employers' organizations to escape the wage agreements. As of today, 85% of the firms, which employ about 55% of the work force, have done so, and more will follow.

The figure also shows the time paths of the manufacturing wage cost per hour in other countries. Obviously, the east German wage cost surpassed the Irish, American and Australian wage costs as early as 1991, and in 1993 it even became higher than the Italian level. Only the Scandinavian and Austrian wage costs have not been matched.

The thick gray line hovering around 45% indicates the uniform level of social aid in Germany relative to the average west German wage income that has been available since the time of unification (October 1990).¹² The line is important since unification included a “Social Union” which meant that the east Germans were, among other things, entitled to the normal west German level of social assistance. In Germany, a family’s labor income is topped up with social assistance payments so that a certain minimum aggregate income is reached which depends on the number of children and other family conditions. No wage contracts are feasible which do not keep a certain distance from this minimum income, because this income is available without any work. The wage negotiators knew this. Apart from their motive to protect their own west German firms and jobs they had to respect the minimum wage implicitly defined by Germany’s social assistance level, but they were not unhappy about this.

Given that wages are the most important production cost and given that labor is, next to land, the only basic factor whose cost is determined at home, the rapid wage increase must be seen as the major reason why the east German adjustment process has come to a halt. It explains why the investment in equipment has been so low (and why the investment in buildings has been so high) despite the negative cost of capital which the public subsidy programs implied. The high wage level is a fundamental brake which had been imposed on the east German economy right from the beginning and which many economists had criticized.¹³ Now that the driving force of the investment subsidy program is no longer

¹² For a family of four.

¹³ See, e.g., Akerlof et al. (1991) or Sinn and Sinn (1991).

available, it has brought the adjustment process to a halt. The east Germans simply priced themselves out of the market.

Of course, the high wage level did not imply that the firms' output per employee went down. To the contrary, the excessive increase in wages has destroyed the less productive firms and has induced new firms to choose a very high capital intensity of production. Both effects have tended to increase the output per employee. This is why despite the tenfold increase in wages unit labor costs have risen only slightly since unification and are now just 20 – 30 % higher than in west Germany. However, the rapid wage increase also explains the dramatic fall in output after unification and the difficulties of generating a self-sustained growth process thereafter. It is a common wisdom nowadays that wages are the major reason for why output per capita in east Germany has remained so low relative to that of west Germany.

7. The conclusions for the welfare state and the wage negotiation process have to be drawn.

There would have been alternatives to the policy chosen because a market solution, too, would eventually have equilibrated the factor prices in the east and the west. Commodity trade, capital movements and the migration of people would all have contributed to this result, and the market process would, in all likelihood, have been able to chose the right speed of convergence in the presence of adjustment and migration costs.¹⁴ The German political establishment, with its ignorance of economics, has not respected the laws of a market economy but has tried to artificially anticipate the factor price equalization. This has turned out to be a serious and expensive mistake.

¹⁴ See Sinn (1999).

What can be done today? It is in the logic of the German solution that more money will be poured into the east German economy to patch up the consequences of the mistakes that have been made. It is true that the resistance to such a solution is growing in the west, in particular since the rapid aging of the society is making it more and more difficult to continue the policy of borrowing the funds needed to finance the transfers to the east. German public debt has grown from 900 billion deutschmarks to 2300 billion deutschmarks within just a decade, and Germany was therefore unable, strictly speaking, to meet the Maastricht criteria. However, east German voters will, in all likelihood, enforce a continuation of the transfer policy. The frequent Länder elections of 1999 have shown very clearly that the east German electorate does not accept the policy of fiscal consolidation that the new social democratic government has advocated. The PDS, the former communist party, has outperformed the social democrats in most Länder with the announcement that it will fight for more transfers and reestablish the “right” kind of socialism after the “wrong” one had failed in the GDR. The PDS is the east German tool to blackmail the west German taxpayers. Any party advocating reasonable economic reforms will have to fear its power.

Nevertheless, it is the task of the economist to define the necessary reforms. Arguably they could include the following measures.

(i) A new system of social assistance

The German system of social assistance could be changed such that it will no longer result in a lower bound on the wage distribution. This can be done by introducing something like the American earned income tax credit; i.e., a system which subsidizes work rather than leisure up to a certain income level. It will induce people to accept low paid jobs and reduce wages

and create such jobs. In principle, it is compatible with better living conditions for the poor, who would receive a market income and social assistance payments in addition.

(ii) *Opt-out clauses*

The German system of collective bargaining could be made more flexible by allowing single firms to pay lower wages if both the employees and the management wish to do so. Currently, they cannot and this inflexibility has led to a massive wave of exits from the east German employers' associations, as was mentioned above.

(iii) *Wage asset swaps*

Wage asset swaps could be used to reduce the wage cost. Management could buy the disclaimer of productivity-driven wage increases with company shares. The shares would be given to the insider employees in exchange for wage moderation. "Outsiders" who are hired after the negotiation would receive the lower wages, but no shares. Thereby wages would effectively be differentiated between insiders and outsiders, and new jobs would be created without insiders' sacrifice and resistance.

(iv) *Reducing the transfers*

The intergovernmental transfers, which currently sum up to 140 billion a year, could gradually be reduced to the necessary infrastructure adjustment and unavoidable social assistance payments so as to minimize the Dutch disease effect. This includes the abolishment of the system of investment subsidies, a re-examination of intergovernmental grants, tougher debt limits and a reduction of east German pensions to the west German level.

The advantage of such reforms would not only be substantial savings on the part of the west German taxpayers. They would also prepare the east German economy for the extremely difficult period it will face from the year 2004, when the first five east European countries

with their 63 million inhabitants will have joined the European Union. The east European enlargement will, in all likelihood, result in a fierce low-wage competition from the new members through commodity trade, capital outflows and a wave of mass migration. The east German economy is Europe's least competitive. It will have a hard time surviving between the front-lines.

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